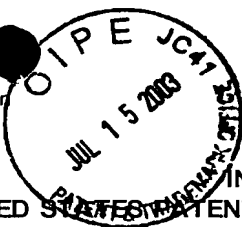


AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P. O. Box 7599
Loveland, Colorado 80537-0599



07/16/03

PATENT APPLICATION

ATTORNEY DOCKET NO. 10981247-1

AF 1247-1
#100
S. Sano
7/22/03

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Robert W. Dmitroca

Serial No.: 09/456,603

Examiner: S. Willett

Filing Date: 12-08-1999

Group Art Unit: 2141

Title: METHOD AND SYSTEM FOR MANAGING PERFORMANCE DATA ABOUT A NETWORK

ASSISTANT COMMISSIONER FOR PATENTS
PO Box 1450
Alexandria, VA 22313-1450

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JUL 18 2003

TRANSMITTAL OF APPEAL BRIEF

Technology Center 2100

Sir:

Transmitted herewith in triplicate is the Appeal Brief in this application with respect to the Notice of Appeal filed on 05-15-2003.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$320.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

() (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

() one month	\$110.00
() two months	\$410.00
() three months	\$930.00
() four months	\$1450.00

() The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 50-1078 the sum of \$320.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 50-1078 pursuant to 37 CFR 1.25.

(X) A duplicate copy of this transmittal letter is enclosed.

(X) I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 222313-1450.
Date of Deposit: 07-15-2003 or

EV256031843US

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

() Date of Facsimile:

Typed Name: John Pallivathukal

Signature:

Respectfully submitted,

Robert W. Dmitroca

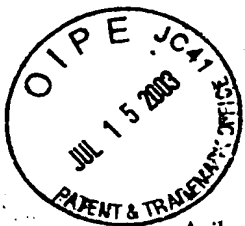
By

Michael A. Papalas

Attorney/Agent for Applicant(s)

Reg. No. 40,381

Date: 07-15-2003



Agilent Technologies, Inc.
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Intellectual Property Administration
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Loveland, Colorado 80537-0599

Docket No.: 10981247-1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Robert W. Dmitroca

Application No.: 09/456,603

Group Art Unit: 2141

Filed: December 8, 1999

Examiner: S. Willett

For: METHOD AND SYSTEM FOR MANAGING
PERFORMANCE DATA ABOUT A
NETWORK

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JUL 18 2003

Technology Center 2100

APPELLANT'S BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This brief is in furtherance of the Notice of Appeal, filed in this case on
May 15, 2003.

The fees required under § 1.17(f) and any required petition for extension of time for
filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF
APPEAL BRIEF.

This brief is transmitted in triplicate.

This brief contains items under the following headings as required by 37 C.F.R.

§ 1.192(c) and M.P.E.P. § 1206:

07/17/2003 HDEMESS1 00000101 501078 09456603
01 FC:1402 320.00 DA

- I. Real Party In Interest
- II. Related Appeals and Interferences
- III. Status of Claims

- IV. Status of Amendments
- V. Summary of Invention
- VI. Issues
- VII. Grouping of Claims
- VIII. Arguments
 - A. Rejections under 35 U.S.C. 103(a)
 - B. Conclusion
- IX. Claims Involved in the Appeal
- Appendix A Claims

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

Agilent Technologies, Inc., a Delaware corporation having its principal place of business in Palo Alto, California.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 20 claims pending in application, which are identified as claims 1-20.

B. Current Status of Claims

- 1. Claims canceled: None
- 2. Claims withdrawn from consideration but not canceled: None
- 3. Claims pending: 1-20
- 4. Claims allowed: None
- 5. Claims rejected: 1-20
- 6. Claims objected to: None

C. Claims On Appeal

The claims on appeal are claims 1-20.

IV. STATUS OF AMENDMENTS

Appellant has filed an Response dated January 17, 2003, after the Final Office Action of November 22, 2002. This Response made no changes to the claims. Appellant presented arguments traversing the final rejection of the claims in the Response. The Examiner responded to the arguments in the Advisory Action mailed February 6, 2003, in which the Examiner stated the arguments have been considered, but do not place the application in condition for allowance.

V. SUMMARY OF INVENTION

Latency graphs (50 of FIGURE 5), which are plots of time delay verses frequency of occurrence, are key measures of the performance of a packet switched network, such as the Internet. Latency graphs are used in the calculation of jitter. Jitter is a degradation in the quality of real-time services such as video or voice applications caused by inconsistent delays in the transmission of data packets, i.e. some packets arrive later and other packets arrive earlier. Real-time applications require a constant rate of data, and if the data is unduly delayed, then the service deteriorates. For example, when a voice service suffers from jitter, the conversation is distorted as portions are faster than normal and other portions are slower than normal. Thus, latency graphs are an important metric in measuring the performance and quality of service of a packet network.

The embodiments of the invention involve systems and methods which use adaptive bin sizing during delay value collection (page 8, line 1-20). The inventive mechanism begins with a small bin range and then increases the range as required. The inventive mechanism uses an array (14 of FIGURE 1) to serve as the delay bins, with each element of the array representing a separate bin. Each delay value will cause a particular element of the array to be incremented. The particular bin which will be incremented is determined from the delay value. If the delay value is larger than the range of the largest ranged bin, then range of the bins must be adjusted (page 10, line 26 – page 12, line 25). This adjustment must take the values of the original array and compress them into the new ranges. For example if bin range is doubled, then each new bin in the lower half of the array must be the sum of two adjacent bins, and the upper half of the array must be set to zero. This adjustment in bin size must be made quickly, as delay values are arriving during the adjustment. For example, in a

gigabit-bit Ethernet link with packets 64 byte packets, a delay value would arrive into the measurement system every 512 ns (page 8, lines 26-27). Note that software is too slow to handle the adjustment, and thus hardware is used to re-compute and re-fill the bins. The information stored in the bins is used to form latency graphs. The values of the various bins can be displayed at any time, and thus, the inventive mechanism provides real-time information of the network latency.

VI. ISSUES

A. First Issue:

The first issue is whether claims 1-4, 10, 12-14 and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Patent Number 5,226,118 issued to Baker et al. (hereinafter Baker) in view of Patent Number 5,495,168 issued to de Vries (hereinafter de Vries).

B. Second Issue:

The second issue is whether claims 5-9, 11, 15-18, and 20 are rejected as being unpatentable over Baker and de Vries in view of Patent Number 6,321,264 issued to Fletcher et al. (hereinafter Fletcher).

C. Third Issue:

The third issue is whether claims 6 and 16 are rejected as being unpatentable over Baker and de Vries in view of Patent Number 5,883,924 issued to Siu et al. (hereinafter Siu).

VII. GROUPING OF CLAIMS

For purposes of this appeal brief only, and without conceding the teachings of any prior art reference, the claims have been grouped as indicated below:

For purposes of this Appeal Brief only, the claims have been grouped as follows:

- Group I Claims 1-4, 10, 12-14, and 19.
- Group II Claims 5, 7-9, 11, 15, 17-18, and 20.
- Group III Claims 6 and 16.

Appellant has provided reasons for the separate patentability of each group in Section VIII, Arguments, herein of each claim group as required by M.P.E.P. § 1206.

VIII. ARGUMENTS

A. REJECTIONS UNDER 35 U.S.C. § 103.

1. Rejection of claims 1-4, 10, 12-14 and 19 under 35 U.S.C. §103(a) as being unpatentable over Baker in view of de Vries.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. See M.P.E.P. §2143. Without conceding the second criteria, Appellant asserts that the rejection does not satisfy the first and third criteria.

Lack of Motivation

In the First Office Action dated August 2, 2002, the Examiner admits that Baker does not teach adjusting or scaling the ranges in a histogram. The Examiner attempts to cure this deficiency by introducing de Vries, which the Office Action alleges to teach having such an element. The motivation for making the combination was presented in the First Office Action as follows:

“Thus, it would have obvious ... to incorporate various data divisions as taught in de Vries into the data system described in the Baker patent because Baker operates with graphical data and de Vries suggests that data can be stored, manipulated and displayed in various known ways.”

In the Response dated October 28, 2002, Appellant notes that it is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness, M.P.E.P. §2143.01. Appellant respectfully asserts that Baker already

stores, manipulates and displays data in various known ways. For example, FIGURE 5 of Baker depicts the retrieval from storage, manipulation and display of data. Thus, the recited motivation does not provide a desirable reason to combine the teachings of de Vries with the teachings of Baker. Consequently, the provided motivation is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In *re Mills*, 916 F.2d 680, 16 USPQ.2d 1430 (Fed. Cir. 1990), as cited in M.P.E.P. §2143.01. Thus, the motivation provided by the Examiner is improper, as the motivation must establish the desirability for making the modification.

In the Final Office Action dated November 22, 2002, the Examiner, in responding to the arguments of Appellant, states that the teachings of Baker suggests that there are many known ways to display various types of data that can be incorporated into Baker's teachings.

In the Response dated January 17, 2003, Appellant respectfully notes that these statements provided by the Examiner in the Final Office Action do not provide any desirability for combining de Vries with Baker. These are merely statements that the teachings can be used together, and are not motivation for making the combination.

In the Advisory Action dated February 6, 2003, the Examiner states "Baker suggests "methods and systems for producing...charts and other displays of data which facilitate analysis of large sets of measurement data", col. 1, lines 7-9 as specifically taught in de Vries and Fletcher."

Appellant notes that the statements of the Examiner in the Advisory Action still do not provide any desirability for combining the alleged teaching of de Vries, namely the adjusting or scaling the ranges in a histogram, with the system of Baker. These statements are again nothing more than statements that the references can be combined.

As no valid suggestion has been made as to why a combination of Baker and de Vries is desirable, Appellant respectfully asks that the rejection of claims 1-4, 10, 12-14 and 19 should be reversed.

Lack of All Limitations

The First Office Action admits that Baker does not teach adjusting or scaling the ranges in a histogram. The Examiner attempts to cure this deficiency by introducing de Vries, which the Examiner alleges to teach having such an element. However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 1 recites, in part, "...receiving a data value; determining whether the data value is within the current range; incrementing the number of a particular bin of the plurality of bins, if the data value is within the current range, wherein the particular bin is selected based on the data value; storing the data value in the array, if the data value is not within the current range; and scaling the current range and the size of the portions, if the data value is not within the current range."

Claim 12 recites, in part, "logic for receiving a data value; logic for determining whether the data value is within the current range; logic for incrementing the number of a particular bin of the plurality of bins, if the data value is within the current range, wherein the particular bin is selected based on the data value; logic for storing the data value in the array, if the data value is not within the current range; and logic for scaling the current range and the size of the portions, if the data value is not within the current range."

The combination of Baker and de Vries does not disclose these limitations. Without conceding the assertions made by the Examiner in the discussion of Baker, Applicant respectfully asserts that de Vries does not teach scaling the current range and the size of the portions, if the data value is not within the current range.

In the Final Office Action, the Examiner has stated that the Applicant's arguments fail to comply with 37 CFR 1.111(b) because Applicant's arguments amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the cited portions of the references. The Examiner further states that Baker at col. 6, lines 13-19 provides an explicit teaching of scaling the current range and size of the portions of the data value that are not within the current range.

In the Response dated January 17, 2003, Appellant respectfully asserts that the arguments comply with 37 CFR 1.111(b), as Appellant has pointed to specific language in each of the independent the claims and then discussed how the combination of references does not teach the language. Furthermore, Appellant respectfully notes that this cited portion (namely column 6, lines 13-19) of Baker is describing the trend chart 50 depicted in FIGURE 4, which is divided into three zones, namely the inner zone of acceptable values, a middle zone of acceptable values that are close to being out-of-spec, and an outer zone of unacceptable values which are out-of-spec. The zones are marked by yellow lines 51 to mark the beginning of the middle zone and red lines 52 to mark the beginning of the outer zone. This portion of Baker does not discuss the scaling the current range and the size of the portions, if the data value is not within the current range.

In the Advisory Action dated February 6, 2003, the Examiner states that the Examiner disagrees with Appellant's arguments and asserts the claimed words "size of the portions" reads on Baker's "unacceptable values" and the claimed words "scaling the current range" reads on Baker's "inner zone". The Examiner further states that "Baker teaches "chart definitions", col. 8, lines 44-48 that read on said values, as does histogram, even with its more limited definition as recognized by the applicant".

Both of these statements are nonsensical. As defined by the claims, a portion is a portion of the current range. For example, claim 1 defines "a plurality of bins for maintaining a count of instances that data values are within a current range, wherein each bin maintains a number of instances within a particular portion of the current range". Thus, it is clear that the current range comprises a plurality of portions. Thus, reading the size of the portions on the outer zone (of unacceptable values) or Baker and the scaling the current range on the inner zone of Baker does not make any sense. Moreover, the portion of the Baker discussing "chart definitions" teaches that chart definition are stored for each data parameter, and may be modified to suit a user's needs. This does not does not teach scaling the current range and size of the portions, if the data value is not within the current range.

Claims 2-4, 10, 13-14, and 19 depend directly from base claims 1 and 12, respectively, and thus inherit all limitations of their respective base claims. Thus, the

Appellant respectfully requests the reversal of the rejection of claims 1-4, 10, 12-14, and 19 under the 35 U.S.C. § 103(a) rejection of record.

Acceptance of these arguments will result in the reversal of the rejections of the claims of Group I.

2. Rejection of claims 5-9, 11, 15-18, and 20 as being unpatentable over Baker and de Vries in view of Fletcher.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. See M.P.E.P. §2143. Without conceding the second criteria, Appellant asserts that the rejection does not satisfy the first and third criteria.

Lack of Motivation

In the First Office Action dated August 2, 2002, the Examiner admits that the combination of Baker and de Vries does not teach using data that comprises network delay times for packets. The Examiner attempts to cure this deficiency by introducing Fletcher, which the Examiner alleges to teach having such elements. The motivation for making the combination was presented as follows:

“Thus, it would have obvious ... to incorporate various time delay data as taught in Fletcher into the data system described in the Baker-de Vries combination because Baker-de Vries operates with graphical data and Fletcher suggests that said data can be displayed on a GUI.”

In the Response dated October 28, 2002, Appellant notes that it is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness, M.P.E.P. §2143.01. Appellant respectfully asserts that Baker already

displays data on a GUI. For example, FIGURE 5 of Baker depicts the data being displayed on a GUI. Thus, the recited motivation does not provide a desirable reason to combine the teachings of Fletcher with the combination of Baker and de Vries. Consequently, the provided motivation is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ.2d 1430 (Fed. Cir. 1990), as cited in M.P.E.P. §2143.01. Thus, the motivation provided by the Examiner is improper, as the motivation must establish the desirability for making the modification. Moreover, Appellant also notes that the motivation provided with respect to this rejection does not overcome the insufficiency of the motivation provided for the rejection of claims 1-4, 10, 12-14 and 19.

In the Final Office Action and the Advisory Action, the Examiner has made no comment with regards to arguments submitted by Appellant to rebut this rejection. Thus, the Appellant respectfully requests the reversal of the rejection of claims 5-9, 11, 15-18, and 20 under the 35 U.S.C. § 103(a) rejection of record.

Lack of All Limitations

The First Office Action admits that the combination of Baker and de Vries does not teach using data that comprises network delay times for packets. The Examiner attempts to cure this deficiency by introducing Fletcher, which the Examiner alleges to teach having such elements. However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

The combination of Baker and de Vries does not disclose these limitations of base claims 1 and 12, as discussed above. Fletcher is not relied upon in the Office Action as disclosing these limitations. Therefore, the combination of references does not teach all elements of the claimed invention.

Claims 5-9, 11, 15-18, and 20 depend directly from base claims 1 and 12, respectively, and thus inherit all limitations of their respective base claims. Each of claims 5-

9, 11, 15-18, and 20 sets forth features and limitations not recited by the combination of Baker, de Vries, and Fletcher. Thus, the Appellant respectfully requests that the rejection of claims 5-9, 11, 15-18, and 20 under the 35 U.S.C. § 103(a) rejection of record be reversed.

Acceptance of these arguments will result in the reversal of the rejections of the claims of Groups II and III.

3. Rejection of claims 6 and 16 as being unpatentable over Baker and de Vries in view of Siu.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. See M.P.E.P. §2143. Without conceding the first and second criteria, Appellant asserts that the rejection does not satisfy the third criteria.

The Final Office Action admits that the combination of Baker and de Vries does not teach jitter. The Examiner attempts to cure this deficiency by introducing Siu, which the Examiner alleges to teach having such elements. However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

The combination of Baker and de Vries does not disclose all of the limitations of base claims 1 and 12, as discussed above. Siu is not relied upon in the Office Action as disclosing these limitations. Therefore, the combination of references does not teach all elements of the claimed invention.

Claims 6 and 16 depend directly from base claims 1 and 12, respectively, and thus inherit all limitations of their respective base claims. Each of claims 6 and 16 sets forth features and limitations not recited by the combination of Baker, de Vries, and Siu. Thus, the Appellant respectfully requests that the rejection of claims 6 and 16 under 35 U.S.C. § 103(a) be reversed.

Acceptance of these arguments will result in the reversal of the rejections of the claims of Group III.

B. CONCLUSION

For the extensive reasons advanced above, Appellant respectfully contends that claims 1-20 are patentable over the rejections of record. Therefore, reversal of the rejection is courteously solicited.

IX. CLAIMS INVOLVED IN THE APPEAL

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A are the pending claims as filed in the original application as no amendments have been made in the claims.


Applicant believes a fee of \$320.00 is due with this response. Please charge the \$320.00 fee as indicated on the TRANSMITTAL OF APPEAL BRIEF.

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV256031843US, in an envelope addressed to: MS Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: July 15, 2003

Signature: 
John Pallivathukal

Respectfully submitted,

By 
Michael A. Papalas
Registration No.: 40,381
Attorneys for Applicant

Date: July 15, 2003

Telephone: (214) 855-8186

APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/456,603:

1. A method for managing performance data about a network for graphical display, wherein the performance data is in the form of data values, wherein method uses a plurality of bins for maintaining a count of instances that data values are within a current range, wherein each bin maintains a number of instances that data values are within a particular portion of the current range, wherein each portion has an equal size, and wherein the method further uses an array for maintaining performance data values that are not within the current range, the method comprising the steps of:
 - receiving a data value;
 - determining whether the data value is within the current range;
 - incrementing the number of a particular bin of the plurality of bins, if the data value is within the current range, wherein the particular bin is selected based on the data value;
 - storing the data value in the array, if the data value is not within the current range; and
 - scaling the current range and the size of the portions, if the data value is not within the current range.
2. The method of claim 1, further comprising the step of:
 - repeating the steps of determining, incrementing, storing and scaling for each received data value.
3. The method of claim 1, further comprising the step of:
 - formatting the numbers for graphical display based on the size of the portions and the current range.
4. The method of claim 3, further comprising the step of:
 - displaying the formatted numbers as a graph to a user.
5. The method of claim 1, wherein the network transports data packets, and the data values are latencies in transporting the data packets through the network.

6. The method of claim 1, further comprising the step of:
determining an amount of jitter that the network is incurring from the numbers of the plurality of bins.

7. The method of claim 1, further comprising the step of:
re-calculating the numbers of the plurality of bins according to the scaled size of the portions.

8. The method of claim 1, wherein the plurality of bins are one set of bins of a plurality of sets of bins, wherein each set of bins is formed from one dimension of elements of a two dimensional array, the step of scaling comprises:

incrementing an index to point to a subsequent set of bins in the two dimensional array; and

multiplying the current range and the size of the portions by a factor.

9. The method of claim 8, wherein:
the factor is 2.

10. The method of claim 8, further comprising the steps of:
receiving a subsequent data value;
determining whether the subsequent data value is within the factored range;
incrementing the number of a particular bin of the plurality of bins, if the subsequent data value is within the factored range, wherein the particular bin is selected based on the subsequent data value;

storing the subsequent data value in the array, if the subsequent data value is not within the factored range; and

scaling the factored range and the size of the factored portions, if the subsequent data value is not within the factored range.

11. The method of claim 10, further comprising the step of:
re-calculating the numbers of the plurality of bins according to the scaled size of the factored portions.

12. A system for managing performance data about a network for graphical display, wherein the performance data is in the form of data values, wherein the system comprises:

a plurality of bins for maintaining a count of instances that data values are within a current range, wherein each bin maintains a number of instances that data values are within a particular portion of the current range, wherein each portion has an equal size;

an array for maintaining performance data values that are not within the current range;
logic for receiving a data value;

logic for determining whether the data value is within the current range;

logic for incrementing the number of a particular bin of the plurality of bins, if the data value is within the current range, wherein the particular bin is selected based on the data value;

logic for storing the data value in the array, if the data value is not within the current range; and

logic for scaling the current range and the size of the portions, if the data value is not within the current range.

13. The system of claim 12, further comprising:

logic for formatting the numbers for graphical display based on the size of the portions and the current range.

14. The system of claim 13, further comprising:

a display for presenting the formatted numbers as a graph to a user.

15. The system of claim 12, wherein the network transports data packets, and the data values are latencies in transporting the data packets through the network.

16. The system of claim 12, further comprising:

logic for determining an amount of jitter that the network is incurring from the numbers of the plurality of bins.

17. The system of claim 1, further comprising:
logic for re-calculating the numbers of the plurality of bins according to the scaled size of the portions.

18. The system of claim 12, wherein the plurality of bins are one set of bins of a plurality of sets of bins, wherein each set of bins is formed from one dimension of elements of a two dimensional array, the logic for scaling comprises:

logic for incrementing an index to point to a subsequent set of bins in the two dimensional array; and

logic for multiplying the current range and the size of the portions by a factor.

19. The system of claim 18, further comprising:
logic for receiving a subsequent data value;
logic for determining whether the subsequent data value is within the factored range;
logic for incrementing the number of a particular bin of the plurality of bins, if the subsequent data value is within the factored range, wherein the particular bin is selected based on the subsequent data value;

logic for storing the subsequent data value in the array, if the subsequent data value is not within the factored range; and

logic for scaling the factored range and the size of the factored portions, if the subsequent data value is not within the factored range.

20. The system of claim 19, further comprising:
logic for re-calculating the numbers of the plurality of bins according to the scaled size of the factored portions.